Remarks

Claims 1-7 have been amended. Claims 1-11 remain in the application, and reexamination of the application as amended is respectfully requested.

Applicants appreciate the opportunity for the interview with the Examiner on March 13 during which Applicants' invention, claims and prior art were discussed. No agreements were reached.

Claim 1 relates to a method for applying a conformal coating using a jetting valve. The jetting valve is moved with respect to a substrate by a positioner and applies droplets of conformal coating material by a jetting process of iteratively causing the jetting valve causing a jetting valve piston to move toward the nozzle to propel a flow of the conformal coating material through the nozzle with a forward momentum and then, breaking the coating material flow using its forward momentum to form a droplet of conformal coating material. In other words, each droplet of conformal coating material dispensed is individually formed by a single iteration of the jetting process.

That process is described in detail in paragraph 22 in reference to Fig. 2. In essence, a droplet generator 12 has a jetting valve 44 with a piston 41 that is lifted away from a seat 49 by a pulse of pressurized air applied to a cylinder 43. "Lifting the piston lower rod 45 from the seat 49 draws conformal coating material in the chamber 47 to a location between the piston lower rod 45 and the seat 49. At the end of the output pulse, the transducer 76 returns to its original state, thereby releasing the pressurized air in the cylinder 43, and a return spring 46 rapidly lowers the piston lower rod 45 back against the seat 49. In that process a droplet 37 of conformal coating material is rapidly extruded or jetted through an opening or dispensing orifice 49 of a nozzle 48. As

schematically shown in exaggerated form in Fig. 2, a very small conformal coating material droplet 37 breaks away as a result of its own forward momentum and is deposited as a dot of conformal coating material on the substrate 36. Successive operations of the cylinder 43 provide respective droplets of material 37. As used herein, the terms "jetting" refers to the above-described process for forming the conformal coating material droplets 37."

Claims 1 and 2 are rejected under 35 U.S.C. §102(b) as being anticipated by Henninger (U.S. Pat. No. 4,736,704). Henninger relates to an applicator for applying a solder masking material to a PC board. The material is pressurized to about 250 psi, and a high speed valve is rapidly opened and closed to propel a shot of the highly pressurized material onto the PC board. In Henninger, the shot of material is propelled from the open valve by the solder material being highly pressurized. In contrast, in claims 1 and 2, the conformal coating material is propelled through the nozzle by a motion of the piston toward the nozzle, which is consistent with the "jetting action" described in the specification. In view of the above, Applicants respectfully submit that claims 1 and 2 are patentable and not anticipated under 35 U.S.C. §102(b) over Henninger.

Claims 1 and 2 are rejected under 35 U.S.C. §102(b) as being anticipated by Bok (U.S. Pat. No. 5,266,349). Bok relates to an applicator for applying a conformal coating to PC boards. The coating is pressurized and fed through a transversely aligned series of individual orifices, wherein each orifice is controlled by a solenoid controlled valve or pump to apply tiny droplets of coating material. Applicants were unable to find any further description of the details of operation of a valve; and therefore, Applicants submit that Bok has no description relating to an operation of a jetting valve as recited in claims 1-3. In view of the above, Applicants respectfully submit that claims 1 and 2 are patentable and not anticipated under 35 U.S.C. §102(b) over Henninger.

Claims 4-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Henninger or Bok in combination with Hynes et al.(U.S. Pat. No. 6,447,847). Applicants comments with respect to Henninger and Bok are also applicable to this rejection. Applicants submit that Hynes et al. provides no description of a jetting valve as recited in claims 4-11. Therefore, Applicants respectfully submit that claims 4-1 are patentable and not obvious under 35 U.S.C. §103(a) over Henninger or Bok in view of Hynes et al.

Applicants submit that the application is now in condition for allowance. The Examiner is invited to contact the undersigned in order to resolve any outstanding issues and expedite the allowance of this application.

Applicant does not believe that any fees are due in connection with this submission. However, if such petition is due or any fees are necessary, the commissioner may consider this to be a request for such and charge any necessary fees to Deposit Account No. 23-3000.

Respectfully submitted,

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